



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
-----------------	-------------	----------------------	---------------------	------------------

09/736,661

12/14/2000

Arturo A. Rodriguez

A-6280

8279

7590 07/29/2008
Scientific-Atlanta Inc
Intellectual Property Dept MS 4.3.518
5030 Sugarloaf Parkway
Lawrenceville, GA 30044

EXAMINER

AN, SHAWN S

ART UNIT

PAPER NUMBER

2621

MAIL DATE

DELIVERY MODE

07/29/2008

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 09/736,661	Applicant(s) RODRIGUEZ ET AL.	
	Examiner SHAWN AN	Art Unit 2621	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 02 July 2008.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 38,53-55,66-78,80-82 and 85-88 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 38,53-55,66-78,80-82 and 85-88 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Request for Continued Examination

1. The request filed on 7/02/08 for a Request for Continued Examination (RCE) under 37 CFR 1.114 based on parent Application No. 09/736,661 is acceptable and a RCE has been established. An action on the RCE follows.

Response to Amendment

2. As per Applicant's instructions as filed on 1/25/08, claims 38, 53-55, 66-67, 70-71, 74, 78, 82, and 85 have been amended, and claims 1-37, 39-52, 56-65, 79, and 83-84 have been canceled.

Response to Remarks

3. Applicant's remarks/arguments filed on 7/02/08 have been fully considered but not persuasive, and currently amended independent claim 38 and its dependent claims are moot in view of the following new grounds of rejection incorporating previously cited prior art references.

Furthermore, Applicant's arguments regarding unamended/previously claimed features/limitations are not persuasive, and further discussed in the following grounds of rejection incorporating previously cited prior art references.

Moreover, in response to applicant's arguments against the references individually, one cannot show nonobviousness by attacking references individually where the rejections are based on combinations of references. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981); *In re Merck & Co.*, 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986).

Moreover, in response to applicant's argument that there is no reason/suggestion to combine the references, the examiner recognizes that obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either in the references themselves or in the knowledge generally available to one

of ordinary skill in the art. See *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988) and *In re Jones*, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992). In this case, all of main novelty features of the pending claims are met by MacInnis et al in view of Boyce et al and Kalra et al providing secondary/additional teachings as well as motivations for their teachings. Please refer to the following grounds of rejections for a detailed discussion.

Claim Rejections - 35 USC § 101

4. 35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

5. Claim 19 is rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter.

The preamble of claim 66 comprises non-statutory subject matter.

The following are examples of acceptable languages in overcoming non-statutory subject matter:

- A. "A computer readable storing a computer program, ...";
- B. "A computer readable embodied with a computer program, ...";
- C. "A computer readable encoded with a computer program, ...".

Note: the merits of claim 66 will be examined.

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. Claims 38, 53-55, 66-78, 80-82, and 85 -88 are rejected under 35 U.S.C. 103(a) as being unpatentable over MacInnis et al (6,570,579 B1) in view of Boyce et al (5,614,952) and Kalra et al (5,953,506).

Regarding claim 38, MacInnis et al discloses a method for adapting to resource constraints of the DHCT (abs.; Fig. 1), comprising:

providing a DHCT (set-top box)(abs.), wherein the DHCT is configured to operate in a non-resource constraint mode (does not have real time constraints) and a resource constraint mode (specific bandwidth requirement mode), and determining whether one of the resource constrained mode or the non-resource restraint mode is to be initiated, and responsive to determining that one of the resource constrained mode is to be initiated, operating the DHCT in the determined resource- constrained mode (col. 55, lines 17-35)(col. 54, lines 36-48; col. 55, lines 8-17);

retrieving a set of reconstructed decompressed (decoded) video frames (Fig. 2, 50) from a first portion of a memory component, wherein the set of video frames corresponds to a video picture (Fig. 2, Memory; col. 5, lines 5-18);

transferring the set of retrieved reconstructed decompressed (decoded) video frames (Fig. 2, 50) to a display device (abs.; television display; Fig. 2, Video Out) and downscaling (52; col. 5, lines 65-67; col. 6, lines 1-9) the video picture.

MacInnis et al does not seem to particularly disclose transferring the set of retrieved reconstructed decompressed video frames to a display device **while** downscaling the video picture in transit to the display device, operating in **a plurality** of resource constraint modes, and determining whether **one** of the resource constrained modes is to be initiated, and responsive to determining that **one** of the resource constrained modes is to be initiated, operating the DHCT in the determined resource-constrained mode.

MacInnis et al also does not seem to particularly disclose the memory component storing compressed video data in a distinct second portion.

However, Kalra et al teaches a scalable media delivery system, comprising operating in **a plurality** of resource constraint modes, and determining whether **one** of the resources constrained modes is to be initiated, and responsive to determining that

Art Unit: 2621

one of the resource constrained mode is to be initiated, operating the determined resource- constrained mode (col. 17, lines 10-67; col. 18, lines 1-24) for reproducing video frames with a resolution that is optimized to the capabilities of the client computer (col. 1, lines 66-67; col. 2, lines 1-3).

Furthermore, Boyce et al teaches digital video decoder comprising retrieving a set of reconstructed decompressed (decoded) video data from a first portion (Fig. 1, 118) of a memory component (114), wherein the memory component stores compressed video data in a distinct second portion (116), wherein the set of video data corresponds to a video picture (col. 4, lines 64-67; col. 5, lines 1-4; col. 10, lines 44-50) for efficiently managing the memory resources such as size or the bandwidth (col. 10, lines 1-4).

Moreover, Boyce et al teaches transferring the set of retrieved reconstructed decompressed (decoded) video data (from Fig. 4, 402 and 403) to a display device (TO DISPLAY) while downscaling (Reduced Resolution) the video picture in transit to the display device for implementing picture-in-picture capabilities in a digital TV without incurring the cost of multiple full resolution decoders (Fig. 4, col. 17, lines 66-67; col. 18, lines 1-16; col. 2, lines 37-40).

Therefore, it would have been considered obvious to a person of ordinary skill in the relevant art employing a method for adapting to resource constraints of the DHCT as taught by MacInnis et al to incorporate all of the teachings as taught by Kalra et al and Boyce et al so as to transfer the set of retrieved reconstructed decompressed video frames to a display device while downscaling the video picture in transit to the display device for implementing picture-in-picture capabilities in a digital TV without incurring the cost of multiple full resolution decoders, and to operate in a plurality of resource constraint modes and determine whether resource constrained modes is to be initiated, and responsive to determining that one of the resource constrained modes is to be initiated, *operating* the DHCT in the determined resource- constrained mode for reproducing video images with a resolution that is optimized to the capabilities of the client computer, and also incorporate the memory component storing compressed video

data in a distinct second portion for efficiently managing the memory resources such as size or the bandwidth.

Regarding claims 53-54, MacInnis et al discloses a DHCT and a method for adapting to resource constraints of the DHCT (abs.; Fig. 1) comprising:

providing a DHCT (set-top box)(abs.);

logics configured to operate the DHCT in a non-resource constraint mode (does not have real time constraints) and a resource constraint mode (specific bandwidth requirement mode), to determine whether one of the resource constrained mode or the non-resource restraint mode is to be initiated, and responsive to determining that one of the resource constrained mode is to be initiated, initiating the resource constraint mode (col. 55, lines 17-35)(col. 54, lines 36-48; col. 55, lines 8-17);

logic configured to retrieve from a first portion of a memory component (Fig. 1, VIDEO IN), a set of compressed pictures (Fig. 2, Video In entering Video Decoder);

logic configured to store in a second memory component (Fig. 2, Memory ;Fig. 1, element 28; col. 3, lines 1-3) a set of decoded pictures (from 50) corresponding to the set of compressed pictures, each of the set of decoded pictures being at a first spatial resolution (Fig. 3, 52; col. 3, lines 1-3);

logic configured to retrieve from the second memory component the set of reconstructed decoded pictures/frames (Fig. 2, 50; col. 3, lines 1-3); and

logics configured to transfer the set of retrieved decoded video pictures/frames (Fig. 2, 50) to a display device (abs.; television display; Fig. 2, Video Out), and scaling (52; col. 5, lines 65-67; col. 6, lines 1-9) the video pictures/frames.

MacInnis et al does not seem to particularly disclose operating in a plurality of resource constrained modes, and determining whether **one** of the resource constrained modes is to be initiated, and responsive to determining that **one** of the resource constrained modes is to be initiated, initiating the resource constraint mode, and transferring a set of retrieved decoded pictures to a display device **while scaling the video picture in transit to the display device to a second spatial resolution without storing pictures in a memory component**, wherein the second spatial resolution is smaller than the first spatial resolution.

MacInnis et al also does not seem to particularly disclose the memory component storing and retrieving a set of decoded pictures in a distinct second portion.

However, Kalra et al teaches a scalable media delivery system, comprising operating in a plurality of resource constraint modes, and determining whether one of the resources constrained modes is to be initiated, and responsive to determining that one of the resource constrained mode is to be initiated, initiating the resource constraint mode (col. 17, lines 10-67; col. 18, lines 1-24) for reproducing video images with a resolution that is optimized to the capabilities of the client computer (col. 1, lines 66-67; col. 2, lines 1-3).

Furthermore, Boyce et al teaches digital video decoder comprising retrieving a set of compressed pictures/frames from a first portion (Fig. 1, 116) of a memory component (114), wherein the memory component stores decoded video pictures/frames in a distinct second portion (116) of the memory component, wherein the set of video frames corresponding to video pictures/frames (col. 4, lines 64-67; col. 5, lines 1-4; col. 10, lines 44-50), and transferring a set of retrieved decoded pictures/frames (Fig. 4, 402, 403) to a display device (To Display) while scaling video pictures/frames in transit to the display device to a second spatial (reduced) resolution without storing pictures in a memory component, wherein the second spatial resolution is smaller than the first spatial resolution (from 401 or 402) for efficiently managing the memory resources such as size or the bandwidth (col. 10, lines 1-4) and implementing picture-in-picture capabilities in a digital TV without incurring the cost of multiple full resolution decoders (col. 17, lines 66-67; col. 18, lines 1-16; col. 2, lines 37-40).

Therefore, it would have been considered obvious to a person of ordinary skill in the relevant art employing the DHCT and the method for adapting to resource constraints of the DHCT as taught by MacInnis et al to incorporate all of the teachings as taught by Kalra et al and Boyce et al so as to transfer the set of retrieved reconstructed decompressed video frames to a display device while downscaling video frames in transit to the display device to a second spatial resolution without storing pictures in a memory component, wherein the second spatial resolution is smaller than the first spatial resolution for implementing picture-in-picture capabilities in a digital TV

without incurring the cost of multiple full resolution decoders, and to operate in a plurality of resource constraint modes and determine whether one of the resource constrained modes is to be initiated, and responsive to determining that one of the resource constrained modes is to be initiated, initiating the resource constraint mode in the DHCT for reproducing video images with a resolution that is optimized to the capabilities of the client computer, and also incorporate the memory component storing compressed video data in a distinct second portion for efficiently managing the memory resources such as size or the bandwidth.

Regarding claims 55 and 66, MacInnis et al discloses a computer readable medium containing a program for use in a DHCT (col. 5, lines 27-30) and a method for adapting to resource constraints of the DHCT (abs.; Fig. 1), comprising:

providing a DHCT (set-top box)(abs.), wherein the DHCT is configured to operate in a non-resource constraint mode (does not have real time constraints) and a resource constraint mode (specific bandwidth requirement mode), and determining whether the resource constrained mode is to be initiated, and responsive to determining that the resource constrained mode is to be initiated, initiating the resource constraint mode (col. 54, lines 36-48; col. 55, lines 8-35);

receiving, in a memory component (Fig. 1, VIDEO IN), video data comprising a complete picture;

retrieving the video frames from the memory component (Fig. 1,10); and

transferring the retrieved video frames (Fig. 2, 50) to a display device (abs.; television display (Fig. 2, Video Out), and downscaling (52; col. 5, lines 5-67; col. 6, lines 1-9) the video picture.

MacInnis et al does not seem to particularly disclose operating in a plurality of resource constrained modes, and determining whether one of the resource constrained modes is to be initiated, and responsive to determining that one of the resource constrained modes is to be initiated, initiating the resource constraint mode, and transferring the set of retrieved reconstructed decompressed video data to a display device *while downscaling the video picture in transit to the display device*.

However, Kalra et al teaches a scalable media delivery system, comprising operating in a plurality of resource constraint modes, and determining whether one of a resource constrained modes is to be initiated, and responsive to determining that one of the resource constrained modes is to be initiated, initiating the resource constraint mode (col. 17, lines 10-55) for reproducing video images with a resolution that is optimized to the capabilities of the client computer (col. 1, lines 66-67; col. 2, lines 1-3).

Furthermore, Boyce et al teaches transferring the set of retrieved reconstructed decompressed (decoded) video frames (from Fig. 4, 402 and 403) to a display device (TO DISPLAY) **while** downscaling (Reduced Resolution) the video picture in transit to the display device for implementing picture-in-picture capabilities in a digital TV without incurring the cost of multiple full resolution decoders (Fig. 4, col. 17, lines 66-67; col. 18, lines 1-16; col. 2, lines 37-40).

Therefore, it would have been considered obvious to a person of ordinary skill in the relevant art employing a computer readable medium containing a program for use in the DHCT and a method for adapting to resource constraints of the DHCT as taught by MacInnis et al to incorporate all of the teachings as taught by Kalra et al and Boyce et al so as to operate in a plurality of resource constrained modes, and to determine whether one of the resource constrained modes is to be initiated, and responsive to determining that one of the resource constrained modes is to be initiated, initiating the resource constraint mode for reproducing video images with a resolution that is optimized to the capabilities of the client computer, and to transfer the set of retrieved reconstructed decompressed video frames to a display device while downscaling the video frames in transit to the display device for implementing picture-in-picture capabilities in a digital TV without incurring the cost of multiple full resolution decoders.

Regarding claims 67, 74, 78, and 82, MacInnis et al discloses transmitting graphics data to the display device (Fig. 2, 50; abs.; television display; Fig. 2, Video Out).

Furthermore, Boyce et al teaches graphics data (Fig. 4, 401) being displayed contemporaneously with the scaled video data (402, 403) for implementing picture-in-

picture capabilities in a digital TV without incurring the cost of multiple full resolution decoders (col. 2, lines 37-40).

Therefore, it would have been considered obvious to a person of ordinary skill in the relevant art employing a DHCT for adapting to resource constraints of the DHCT as taught by MacInnis et al to incorporate all of the teaching as taught by Boyce et al for implementing picture-in-picture capabilities in a digital TV without incurring the cost of multiple full resolution decoders.

Regarding claims 68-69, MacInnis et al discloses horizontal and vertical downscaling (col. 44, lines 14-21).

Regarding claim 70, MacInnis et al discloses downscaled video pictures being not stored in the memory component, but rather stored in the memory component of Fig. 2 or Fig. 1, element 28 (col. 3, lines 1-3).

Regarding claim 71, MacInnis et al discloses transmitting graphics data to the display device (Fig. 2, 50; abs.; television display; Fig. 2, Video Out), and Boyce et al teaches graphics data (Fig. 4, 401) being displayed contemporaneously with the scaled video data (402, 403).

Regarding claims 72-73, 75-77, and 80-81, MacInnis et al discloses horizontal and vertical downscaling (col. 44, lines 14-21).

Regarding claims 85-88, MacInnis et al discloses a memory constrained mode (col. 55, lines 17-35) and Kalra et al teaches a bus-bandwidth constrained mode (col. 17, lines 10-24).

Therefore, it would have been considered obvious to a person of ordinary skill in the relevant art to recognize that the above constrained modes could very well be combined to represent a memory and bus-bandwidth constrained mode to accommodate both memory and bus-bandwidth constrained modes as a whole.

Conclusion

8. Any inquiry concerning this communication or earlier communications from the Examiner should be directed to *Shawn An* whose telephone number is 571-272-7324.

Art Unit: 2621

9. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

10. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/SHAWN AN/

Primary Examiner, Art Unit 2621

7/23/08

